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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/328,007 | 06/08/1999 | DO-YOUNG KO | Q54451 | 6191 |

7590 08/11/2004

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EXAMINER

WONG, ALLEN C

ART UNIT PAPER NUMBER

2613

20

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/328,007

Applicant(s)

KO, DO-YOUNG

Examiner

Allen Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5/17/04 have been fully read and considered but they are not persuasive.

Applicant has amended claim 1 to overcome the 35 U.S.C.112, 2nd paragraph rejection, so 35 U.S.C.112, 2nd paragraph is withdrawn.

Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimburger (5,889,890) in view of Kohiyama (5,867,219).

Regarding claims 1 and 7, Heimburger discloses an apparatus for changing a horizontal or vertical scanning frequency in a decoding block for restoring an MPEG signal (fig.2 is the diagram of the apparatus for changing a horizontal/vertical scanning frequency in MPEG decoding) including a prediction memory for storing I picture data (fig.2, element 1 can store I pictures) and forward prediction restored P picture data (fig.2, element 3 can store P and B pictures) and a mean operating unit for generating calculated mean data for bi-directional prediction (see col.4, ln.6 to col.5, ln.9; in fig.2,

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element 5 calculates the mean data for bi-directional prediction since it evidently obtains the data from the I pictures, stored in memory 1, and the predictive pictures P and B, stored in memory 3), comprising:

- a B picture memory for storing B picture data, the B picture data having been bidirectionally prediction restored by the decoding block (fig.2, element 3 can store B pictures that have been bidirectionally prediction restored);

- a prediction memory switching portion for switching data output from the decoding block to the prediction memory or the B picture memory depending on the type of picture (col.4, ln.6 to col.5, ln.9; the data output from the decoding block to the prediction memory or the B picture memory is switched, where there are P pictures, also known as type 2, or B pictures, also known as type 3); and

- an output data switching portion for performing switching control to increase a frequency with which data is output from the prediction memory and the B picture memory with respect to a general scanning method, using the motion vector of the decoding block, and outputting data (col.5, ln.60 to col.7, ln.16; fig.2, element 5 is the motion estimator applies all of the information needed to process the increasing of the switching frequency of data stored in memory 3 and the outputting of the converted data).

Although Heimburger does not specifically disclose the prediction memory switching portion for switching the I picture data, the picture data and the B picture data output from the decoding block to the prediction memory or the B picture memory depending on the type of picture, however, Kohiyama teaches the use of a memory

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controller that can manage and switch the I picture data, the picture data and the B picture data output from the decoding block to the prediction memory or the B picture memory depending on the type of picture (fig.3, element 16 is memory controller that can manage the switching of image data stored in memory 17, storing the I, P and B pictures, depending on the picture type needed and that the bus 3 carries the appropriate image data for analysis and/or output). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Heimbürger and Kohiyama, as a whole, for effectively and precisely saving image data in an efficient fashion so as to conserve storage space requirements (Kohiyama col.6, ln.14-22).

Regarding claims 3 and 6, Heimbürger discloses the output data switching portion performs switching control so as to double the vertical scanning frequency of a video signal by repeating output data twice in units of a picture with respect to a general scanning method (col.5, ln.21-25).

1. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heimbürger (5,889,890) and Kohiyama (5,867,219) in view of Hackett (5,642,170).

Regarding claim 2, Heimbürger does not specifically disclose the period of a data read is reduced to half by setting read clock frequencies of the prediction memory and the B picture memory to be two times higher than the read clock frequencies of a general scanning method. However, Hackett teaches the period of a data read is reduced to half by setting read clock frequencies of the prediction memory and the B picture memory to be two times higher than the read clock frequencies of a general

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scanning method (col.4, ln.58-62; the input frequency is 50/60 Hz, then after passing through the motion compensation interpolation apparatus and switch, the reading clock frequency reduces to 50/120 Hz, so clearly, the period of a data read is reduced by 1/2). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Heimburger and Hackett, as a whole, for obtaining high picture quality in an efficient manner.

Allowable Subject Matter

4. Claims 4-5 and 8-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art specifically discloses wherein the output data switching portion performs switching control so as to repeat data of a corresponding horizontal line of a previous picture between horizontal lines of a picture when the value of a motion vector is no more than a reference value and to insert corresponding line data of a previous picture stored in the prediction memory between the horizontal lines of the picture when the value of the motion vector is larger than the reference value. Also, none of the prior art specifically discloses wherein the output data switching portion performs switching control so as to repeat data of a corresponding horizontal line of a previous picture between horizontal lines of a picture when the value of a motion vector is no more than a reference value and to insert the calculated line mean data of the

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mean operating portion between the horizontal lines of the picture when the value of the motion vector is larger than the reference value.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (703) 306-5978. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm.

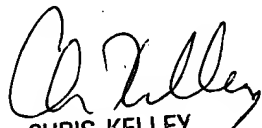
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Allen Wong
Examiner
Art Unit 2613

AW
8/3/04


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